National Institute of Environmental Health Sciences

Association of weather and anthropogenic factors for transmission of Japanese encephalitis in an endemic area of India

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Abstract:

Weather and anthropogenic factors are important determinants for Japanese encephalitis (JE) transmission. During 2008-2010, an increasing trend of JE was observed in Dibrugarh district of Northeast India. The JE cases were found to be clustered between June to October in each year. Monthly minimum temperature and rainfall were significantly associated with JE transmission at 1 and 2 months lagged. However, the relationship was more prominent at a lag of 1 month than that of two. Regression analysis suggested that rainfall, minimum and maximum temperature, and relative humidity at 6:00 h are significant predictors ($P < 0.05$) of quarterly occurrence of JE cases. Additional anthropogenic risk factors including the conditions such as pig sty/cattle shed around and lower part of the houses and proximity of rice field to the dwelling houses ($P < 0.05$) were also found to be predictors for JE occurrence. Meteorological and anthropogenic risk factors can be used to forecast JE outbreaks in Assam which in turn can help the local health authorities to protect communities in JE prone areas.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Precipitation, Temperature

Geographic Feature:

resource focuses on specific type of geography

Rural

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: India

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Viral Encephalitis

Medical Community Engagement:

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content